



**YEAR 5 PROFICIENCY TESTING AT VALLEY ASPHALT SITE
(MORAINE, OHIO/SOUTH DAYTON DUMP & LANDFILL) UNILATERAL
ADMINISTRATIVE ORDER FOR REMOVAL ACTIVITIES, DATED MARCH 21, 2013**

Submitted To:

**US EPA – Region 5, Superfund Division
Emergency Response Section #1
Attn: Mr. Steven Renninger
renninger.steven@epa.gov**

**Report No. 161803-0818-143
August 6, 2018**

**BOWSER
MORNER®**



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August 6, 2018

Via email only

renninger.steven@epa.gov
US EPA – Region 5, Superfund Division
Emergency Response Section #1
26 West Martin Luther Drive
Cincinnati, OH 45268

Attention: Mr. Steven Renninger

Re: Report No. 161803-0818-143, Year 5 Proficiency Sampling Report; Valley Asphalt Site (Moraine, Ohio/South Dayton Dump & Landfill) Unilateral Administrative Order for Removal Activities, Dated March 21, 2013

Dear Project Representatives:

Bowser-Morner, Inc. is submitting the enclosed Year 5 Proficiency Sampling Report for the Valley Asphalt Site (South Dayton Dump & Landfill) in Moraine, Montgomery County, Ohio. This report also serves as the August 2018 Bi-Annual Status Report.

One indoor air sample was collected and analyzed for TO-15 parameters. Results of the testing show VOC levels below the available ODH screening levels and/or other applicable screening levels. As per the Modified Work Plan (Bowser-Morner Report 161803-0415-059), Addendum No. 3, no sub-slab or outdoor air samples were collected nor needed to be collected.

These results indicate that the SSDS system installed in Building 4 continues to mitigate vapor intrusion and is protective of the employees that occupy the structure.

If you have questions, please contact me at (937) 236-8805, ext. 340.

Respectfully submitted,
BOWSER-MORNER, INC.

A handwritten signature in blue ink that reads "Katherine H. Beach".

Katherine H. Beach, R.E.M.
Senior Environmental Specialist

KHB/ac
Appendices

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1.0 INTRODUCTION

In response to the Unilateral Administrative Order (UAO) for Removal Actions issued to Valley Asphalt (Valley) by the United States Environmental Protection Agency (EPA) on March 21, 2013 and on behalf of Valley Asphalt, Bowser-Morner, Inc. performed vapor intrusion (VI) testing required by the VI Mitigation Work Plan ("Work Plan") submitted on May 30 and revised on July 7, 2013 and April 22, 2015.

The purpose of this report is to provide the results of the Year 5 Proficiency Sampling. A summary of the results of previous testing (conducted after installation of the sub-slab depressurization system [SSDS]) is also enclosed.

This report is organized into the following sections:

- **Section 1, Introduction** – Provides a brief description of the objective and scope of the work summarized in this report.
- **Section 2, Site Background** – Discusses the Site description and history.
- **Section 3, Sampling and Field Screening Activities** – Discusses Site sampling and field screening methods used during this work.
- **Section 4, Analytical Methods** – Discusses analytical methods used during this work.
- **Section 5, Analytical Results** – Discusses analytical results for samples collected during this work.
- **Section 6, Conclusions** – Summarizes the analytical results and presents conclusions based on these findings.
- Laboratory results and tables are presented in the Appendices.

2.0 SITE BACKGROUND

The Valley Asphalt site (Site) is located at 1901 Dryden Road in Moraine, Montgomery County, Ohio. The Site sits atop the northern part of the South Dayton Dump and Landfill site, which is undergoing a concurrent Removal Action.

Originally, seven buildings on Site were identified and included in the Work Plan. Six of those structures have been demolished, thus eliminating an exposure risk of vapor intrusion. The remaining building, Building 4, still stands, is used by Valley and is the subject of this proficiency testing event.

During VI investigations conducted in 2012 by CRA and EPA, trichloroethylene (TCE) was observed in four different sub-slab samples collected in Building 4. Each sample exceeded the ODH TCE sub-slab screening level. TCE was not observed in the indoor air sample collected in Building 4 above the ODH TCE indoor air screening level. Building 4 is a two-story building used as the control center for the Site's asphalt plant. The basement, approximately 5-feet below grade, consists of a poured foundation and poured walls. The sub-slab samples were collected from below the basement floor. A pre-fabricated building sits atop of the basement and is the control center for the asphalt operations.

Due to the risk to human health to indoor air exposure to VOCs and the risk of explosive conditions due to explosive gas, EPA ordered Valley Asphalt to undertake removal activities to mitigate these risks. Valley Asphalt submitted the required Work Plan for the removal activities on May 30 (revised on July 7, 2013) and has steadily performed the work outlined therein, as follows:

- A sub-slab depressurization system (SSDS) was installed in the basement of Building 4 on July 10, 2013 to mitigate sub-slab vapors that appear to be migrating up from the underlying South Dayton Dump and Landfill.
- Initial proficiency sampling was conducted in July and August of 2013. The initial proficiency sampling showed no exceedances of the ODH screening levels and that the mitigation system (SSDS) was working to remove volatiles from beneath the slab of Building 4.
- Additional proficiency testing was conducted at 180-days; no exceedances of the ODH screening levels were detected. Inspection showed that the mitigation system (SSDS) continued to work to remove volatiles from beneath the slab of Building 4.
- The Year 1 Proficiency Testing was performed on July 7, 2014. TCE was detected for the first time in the indoor air sample collected from Building 4. TCE had not been detected in the indoor air during the previous Valley-directed sampling of the Building 4. However, the concentration of TCE in the sample did not exceed available ODH and/or other regulatory levels. No other contaminants detected exceeded available ODH and/or other regulatory levels.
- The Year 2 Proficiency Testing was performed on July 7, 2015. The primary COC (TCE) was not detected during this sampling event. One other volatile in the TO-15 list that was not detected in the previous sampling event (henceforth noted as a “new” volatile), styrene, was detected during this proficiency testing. There is no ODH screening level for styrene. Other volatiles, detected in the previous sampling event(s), were detected during this proficiency testing; none exceeded the ODH screening levels.
- The Year 3 Proficiency Testing was performed on July 5, 2016. The primary COC (TCE) was not detected during this sampling event. Three other volatile compounds in the TO-15 list that were not detected in the previous sampling event (henceforth noted as a “new” volatile), benzene, MEK and MIBK, were detected during this proficiency testing. While benzene has an ODH screening level of 2.0 ppb, that level was not exceeded (0.238 ppb was detected). There are no ODH screening levels for MEK and MIBK. Other volatiles, also detected in the previous sampling event(s), were detected during this proficiency testing; none exceeded the ODH screening levels.
- The Year 4 Proficiency Testing was performed on June 20, 2017. A duplicate sample was collected during this event. The primary COC (TCE) was not detected during this sampling event. No “new” volatiles were detected during this proficiency testing. Other volatiles, detected in the previous sampling event(s), were detected during this proficiency testing; none exceeded the ODH screening levels.

The following information summarizes the Year 5 Proficiency Testing required by the Work Plan.

3.0 SAMPLING AND FIELD SCREENING ACTIVITIES

All sampling was performed in accordance with the Work Plan submitted to EPA on May 30 and revised on July 7, 2013 and April 22, 2015. All deviations from the Work Plan will be noted in the applicable section(s) below.

3.1 BUILDING SURVEY

In accordance with Section 3.3 of the Work Plan, a building survey was completed in Building 4 on June 27, 2018 and documented on a Form 1: Building Physical Survey Questionnaire. A VOC survey was conducted using a hand-held PID (ppb MiniRAE). The survey indicated no VOCs in the basement of Building 4. A similar scan conducted in the upstairs area of Building 4 indicated the presence of VOCs (from 19 to 252 ppb). A physical inventory of storage areas revealed several containers of cleaning products that produced positive readings on the PID. These containers were removed from the building.

The building was re-surveyed the morning of the proficiency testing. The VOC survey identified the presence of elevated VOC levels in both the test area (basement) and upstairs of Building 4. The PID was used to scan each item stored in the basement; the source of the VOCs was identified as empty plastic containers stored in this area. It was concluded that plastic was off-gassing in the heat (80° F). All plastic items appearing to off-gas were removed from the building. The exterior door to the building was left open for approximately two hours to facilitate aeration of the indoor air of the building prior to testing. Testing was initiated when the PID generated readings less than 20 ppb in the basement.

3.2 FIELD SCREENING FOR METHANE

Field screening for methane inside the building was performed in accordance with sections 3.4, 3.4.1 and 3.5 of the Work Plan. The concentration of methane in the ambient air at the sub-slab probe was measured using field instrumentation (LandTec Gem) at the beginning and end of sampling on June 29, 2018. Methane was measured to be 00.0 percent each time.

3.3 YEAR 5 PROFICIENCY TESTING

The Year 5 Proficiency Sample was collected on June 29, 2018 in accordance with Sections 3.1, 3.2.1, 3.2.1.1 and 3.3 of the Work Plan. This sample was collected over a period of 8 hours and 2 minutes to meet the SUMMA can sample collection requirements listed in Section 3.1 and Table 3 of the Work Plan. The sample was analyzed for TO-15 parameters.

The primary COC (TCE) was not detected during this sampling event. No other volatiles in the TO-15 list that had not been detected in any of the previous sampling events (henceforth noted as “new” volatiles) were detected during this proficiency testing. Other volatiles, detected in the previous sampling event(s), were detected during this proficiency testing; none exceeded the ODH screening levels.

4.0 ANALYTICAL METHODS

Bowser-Morner, Inc. collected one indoor air sample from Building 4 for analysis by a contract laboratory. Pace/ESC Lab Sciences (Mt. Juliet, Tennessee) was used to analyze the sample. This sample was analyzed for volatile organic compounds using EPA TO-15. The laboratory data results are enclosed as Appendix A of this report.

5.0 ANALYTICAL RESULTS

Tables 1 and 2 summarize the analytical results, as follows:

Table 1 Proficiency Sampling: Indoor Air

Table 2 Summary of Seven Proficiency Sampling Events: Indoor Air

Tables 1 and 2 are located in Appendix B. The analytical results presented in these tables are compared to the ODH screening and/or other regulatory levels. No ODH screening and/or other regulatory levels were exceeded.

The primary COC for this project, TCE, was not detected in the indoor air sample during the Year 5 proficiency testing. While other volatiles were identified during this sampling event, none exceeded available ODH screening levels.

The validated laboratory analytical results for the samples will be submitted with the Final Report summarizing the actions taken to comply with the UAO.

6.0 CONCLUSIONS

A Year 5 proficiency sample was collected from the indoor air of Building 4 in June 2018. This sample was analyzed by TO-15 methods. No parameter exceeded available ODH and/or other regulatory levels.

As detailed in the Mitigation Summary Database (included in Appendix C), proficiency testing shows that the mitigation system (SSDS) continues to remove volatiles from beneath the slab of Building 4 on the Valley site and is protective of the employees working inside.



Appendix A
Laboratory Report

ANALYTICAL REPORT

July 10, 2018

Bowser-Morner, Inc.

Sample Delivery Group: L1006526
Samples Received: 07/03/2018
Project Number: 161803
Description: Site Investigation
Site: OHIO
Report To: Katherine H. Beach
4518 Taylorsville Rd.
Dayton, OH 45424

Entire Report Reviewed By:



John Hawkins
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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ONE LAB. NATIONWIDE.



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Qc: Quality Control Summary	6	⁷ Gl
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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



IA-161803-062918-MT-41 L1006526-01 Air		Collected by Michelle C Torns	Collected date/time 06/29/18 00:00	Received date/time 07/03/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time
Volatile Organic Compounds (MS) by Method TO-15	WG1134355	1	07/06/18 13:47	07/06/18 13:47
Volatile Organic Compounds (MS) by Method TO-15	WG1134819	20	07/07/18 11:41	07/07/18 11:41

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Technical Service Representative

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ GI
- ⁸ AI
- ⁹ SC



Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	25.0	59.4	94.5	225		20	WG1134819
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1134355
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1134355
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1134355
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1134355
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1134355
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1134355
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1134355
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1134355
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1134355
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1134355
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1134355
Chloromethane	74-87-3	50.50	0.200	0.413	0.404	0.834		1	WG1134355
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1134355
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1134355
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1134355
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1134355
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1134355
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1134355
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1134355
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1134355
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1134355
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1134355
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1134355
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1134355
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1134355
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1134355
Ethanol	64-17-5	46.10	0.630	1.19	39.1	73.6		1	WG1134355
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1134355
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.519	2.92		1	WG1134355
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.321	1.59		1	WG1134355
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1134355
n-Hexane	110-54-3	86.20	0.200	0.705	1.47	5.17		1	WG1134355
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1134355
Methylene Chloride	75-09-2	84.90	0.200	0.694	3.02	10.5		1	WG1134355
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1134355
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1134355
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1134355
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1134355
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1134355
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1134355
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1134355
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1134355
Toluene	108-88-3	92.10	0.200	0.753	2.73	10.3		1	WG1134355
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1134355
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1134355
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1134355
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1134355
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1134355
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1134355
m,p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1134355
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1134355
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.348	1.71		1	WG1134355
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1134355
(S)-1,4-Bromofluorobenzene	460-00-4	175	60.0-140		93.3				WG1134355
(S)-1,4-Bromofluorobenzene	460-00-4	175	60.0-140		95.7				WG1134819



Method Blank (MB)

(MB) R3323729-3 07/06/18 09:48

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv	
Allyl Chloride	U		0.0546	0.200	¹ Cp
Benzene	U		0.0460	0.200	² Tc
Benzyl Chloride	U		0.0598	0.200	³ Ss
Bromodichloromethane	U		0.0436	0.200	⁴ Cn
Bromoform	U		0.0786	0.600	⁵ Sr
Bromomethane	U		0.0609	0.200	⁶ Qc
Carbon disulfide	U		0.0544	0.200	⁷ Gl
Carbon tetrachloride	U		0.0585	0.200	⁸ Al
Chlorobenzene	U		0.0601	0.200	⁹ Sc
Chloroethane	U		0.0489	0.200	
Chloroform	U		0.0574	0.200	
Chloromethane	U		0.0544	0.200	
Dibromochloromethane	U		0.0494	0.200	
1,2-Dibromoethane	U		0.0185	0.200	
1,2-Dichlorobenzene	U		0.0603	0.200	
1,3-Dichlorobenzene	U		0.0597	0.200	
1,4-Dichlorobenzene	U		0.0557	0.200	
1,2-Dichloroethane	U		0.0616	0.200	
1,1-Dichloroethane	U		0.0514	0.200	
1,1-Dichloroethene	U		0.0490	0.200	
cis-1,2-Dichloroethene	U		0.0389	0.200	
trans-1,2-Dichloroethene	U		0.0464	0.200	
1,2-Dichloropropane	U		0.0599	0.200	
cis-1,3-Dichloropropene	U		0.0588	0.200	
trans-1,3-Dichloropropene	U		0.0435	0.200	
1,4-Dioxane	U		0.0554	0.200	
Ethylbenzene	U		0.0506	0.200	
Trichlorofluoromethane	U		0.0673	0.200	
Dichlorodifluoromethane	U		0.0601	0.200	
Hexachloro-1,3-butadiene	U		0.0656	0.630	
n-Hexane	U		0.0457	0.200	
Isopropylbenzene	U		0.0563	0.200	
Methylene Chloride	U		0.0465	0.200	
Methyl Butyl Ketone	U		0.0682	1.25	
2-Butanone (MEK)	U		0.0493	1.25	
4-Methyl-2-pentanone (MIBK)	U		0.0650	1.25	
Methyl Methacrylate	U		0.0773	0.200	
MTBE	U		0.0505	0.200	
Styrene	U		0.0465	0.200	
1,1,2,2-Tetrachloroethane	U		0.0576	0.200	



L1006526-01

Method Blank (MB)

(MB) R3323729-3 07/06/18 09:48

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Tetrachloroethylene	U		0.0497	0.200
Toluene	U		0.0499	0.200
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0665	0.200
1,1,2-Trichloroethane	U		0.0287	0.200
Trichloroethylene	U		0.0545	0.200
1,2,4-Trimethylbenzene	U		0.0483	0.200
1,3,5-Trimethylbenzene	U		0.0631	0.200
Vinyl chloride	U		0.0457	0.200
Vinyl acetate	U		0.0639	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
Ethanol	U		0.0832	0.630
(S) 1,4-Bromofluorobenzene	91.8		60.0-140	

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323729-1 07/06/18 08:15 • (LCSD) R3323729-2 07/06/18 09:01

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Ethanol	3.75	3.85	3.84	103	102	52.0-158			0.275	25
Dichlorodifluoromethane	3.75	3.81	3.81	102	102	69.0-143			0.140	25
Chloromethane	3.75	3.51	3.54	93.6	94.4	70.0-130			0.921	25
Vinyl chloride	3.75	3.56	3.55	95.0	94.5	70.0-130			0.452	25
Bromomethane	3.75	4.18	4.25	111	113	70.0-130			1.78	25
Chloroethane	3.75	3.63	3.64	96.7	97.2	70.0-130			0.450	25
Trichlorodifluoromethane	3.75	4.11	4.14	110	110	70.0-130			0.714	25
1,1-Dichloroethene	3.75	3.71	3.72	98.9	99.2	70.0-130			0.337	25
1,1-Dichloroethane	3.75	3.64	3.66	96.9	97.7	70.0-130			0.797	25
Carbon disulfide	3.75	3.72	3.76	99.1	100	70.0-130			1.07	25
Methylene Chloride	3.75	3.47	3.51	92.6	93.6	70.0-130			1.01	25
MTBE	3.75	3.75	3.77	100	100	70.0-130			0.414	25
trans-1,2-Dichloroethene	3.75	3.64	3.65	96.9	97.4	70.0-130			0.443	25
n-Hexane	3.75	3.50	3.51	93.3	93.5	70.0-130			0.187	25
Vinyl acetate	3.75	3.57	3.61	95.3	96.2	70.0-130			0.922	25
Methyl Ethyl Ketone	3.75	3.80	3.82	101	102	70.0-130			0.412	25
cis-1,2-Dichloroethene	3.75	3.64	3.66	97.2	97.5	70.0-130			0.389	25
Chloroform	3.75	3.92	3.96	105	106	70.0-130			0.937	25
1,1,1-Trichloroethane	3.75	4.04	4.06	108	108	70.0-130			0.503	25



Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323729-1 07/06/18 08:15 • (LCSD) R3323729-2 07/06/18 09:01

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Carbon tetrachloride	3.75	4.02	4.05	107	108	70.0-130			0.659	25
Benzene	3.75	3.84	3.85	102	103	70.0-130			0.282	25
1,2-Dichloroethane	3.75	3.96	3.96	106	106	70.0-130			0.0715	25
Trichloroethylene	3.75	3.99	4.01	107	107	70.0-130			0.344	25
1,2-Dichloropropane	3.75	3.69	3.68	98.3	98.1	70.0-130			0.161	25
1,4-Dioxane	3.75	4.07	4.04	108	108	70.0-152			0.737	25
Bromodichloromethane	3.75	4.01	4.01	107	107	70.0-130			0.0852	25
cis-1,3-Dichloropropene	3.75	3.83	3.84	102	103	70.0-130			0.330	25
4-Methyl-2-pentanone (MIBK)	3.75	3.71	3.71	98.9	99.0	70.0-142			0.134	25
Toluene	3.75	3.99	3.99	106	106	70.0-130			0.0583	25
trans-1,3-Dichloropropene	3.75	3.88	3.88	103	104	70.0-130			0.0915	25
1,1,2-Trichloroethane	3.75	4.01	4.03	107	107	70.0-130			0.466	25
Tetrachloroethylene	3.75	4.27	4.29	114	114	70.0-130			0.476	25
Methyl Butyl Ketone	3.75	3.86	3.85	103	103	70.0-150			0.126	25
Dibromochloromethane	3.75	4.34	4.36	116	116	70.0-130			0.568	25
1,2-Dibromoethane	3.75	4.46	4.45	119	119	70.0-130			0.0269	25
Chlorobenzene	3.75	4.46	4.49	119	120	70.0-130			0.638	25
Ethylbenzene	3.75	4.08	4.10	109	109	70.0-130			0.479	25
m&p-Xylene	7.50	7.72	7.75	103	103	70.0-130			0.385	25
o-Xylene	3.75	4.07	4.09	109	109	70.0-130			0.453	25
Styrene	3.75	4.10	4.11	109	109	70.0-130			0.0569	25
Bromoform	3.75	4.38	4.40	117	117	70.0-130			0.550	25
1,1,2,2-Tetrachloroethane	3.75	4.01	4.03	107	107	70.0-130			0.471	25
1,3,5-Trimethylbenzene	3.75	4.21	4.23	112	113	70.0-130			0.645	25
1,2,4-Trimethylbenzene	3.75	4.00	4.02	107	107	70.0-130			0.453	25
1,3-Dichlorobenzene	3.75	4.42	4.45	118	119	70.0-130			0.651	25
1,4-Dichlorobenzene	3.75	4.60	4.64	123	124	70.0-130			0.759	25
Benzyl Chloride	3.75	4.34	4.34	116	116	70.0-144			0.0412	25
1,2-Dichlorobenzene	3.75	4.34	4.36	116	116	70.0-130			0.437	25
1,2,4-Trichlorobenzene	3.75	4.57	4.51	122	120	70.0-155			1.37	25
Hexachloro-1,3-butadiene	3.75	4.18	4.17	111	111	70.0-145			0.108	25
Allyl Chloride	3.75	3.39	3.42	90.5	91.1	70.0-130			0.731	25
Methyl Methacrylate	3.75	3.63	3.63	96.9	96.7	70.0-130			0.192	25
Isopropylbenzene	3.75	3.94	3.96	105	106	70.0-130			0.628	25
(S) 1,4-Bromofluorobenzene				96.2	96.2	60.0-140				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3324016-3 07/07/18 09:49

Analyte	MB Result ppbv	<u>MB Qualifier</u>	MB MDL ppbv	MB RDL ppbv
Acetone	0.0826	J	0.0569	1.25
(S) 1,4-Bromofluorobenzene	94.6		60.0-140	

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3324016-1 07/07/18 08:26 • (LCSD) R3324016-2 07/07/18 09:07

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits %
Acetone	3.75	4.05	4.00	108	107	70.0-130			1.09	25
(S) 1,4-Bromofluorobenzene			98.3	97.5	97.5	60.0-140				



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.	¹ Cp
ND	Not detected at the Reporting Limit (or MDL where applicable).	² Tc
RDL	Reported Detection Limit.	³ Ss
Rec.	Recovery.	⁴ Cn
RPD	Relative Percent Difference.	⁵ Sr
SDG	Sample Delivery Group.	⁶ Qc
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.	⁷ GI
U	Not detected at the Reporting Limit (or MDL where applicable).	⁸ AI
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.	⁹ SC
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.	
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.	
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.	
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.	
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.	
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.	
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.	
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.	
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.	

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

- * Not all certifications held by the laboratory are applicable to the results reported in the attached report.
- * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

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Arkansas	88-0469
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Connecticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia ¹	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky ^{1,6}	90010
Kentucky ²	16
Louisiana	AI30792
Louisiana ¹	LA180010
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086

Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey-NELAP	TN002
New Mexico ¹	n/a
New York	11742
North Carolina	Env375
North Carolina ¹	DW21704
North Carolina ³	41
North Dakota	R-140
Ohio-VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	LA000356
South Carolina	84004
South Dakota	n/a
Tennessee ^{1,4}	2006
Texas	T 104704245-17-14
Texas ⁵	LAB0152
Utah	TN00003
Vermont	VT2006
Virginia	460132
Washington	C847
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

Third Party Federal Accreditations

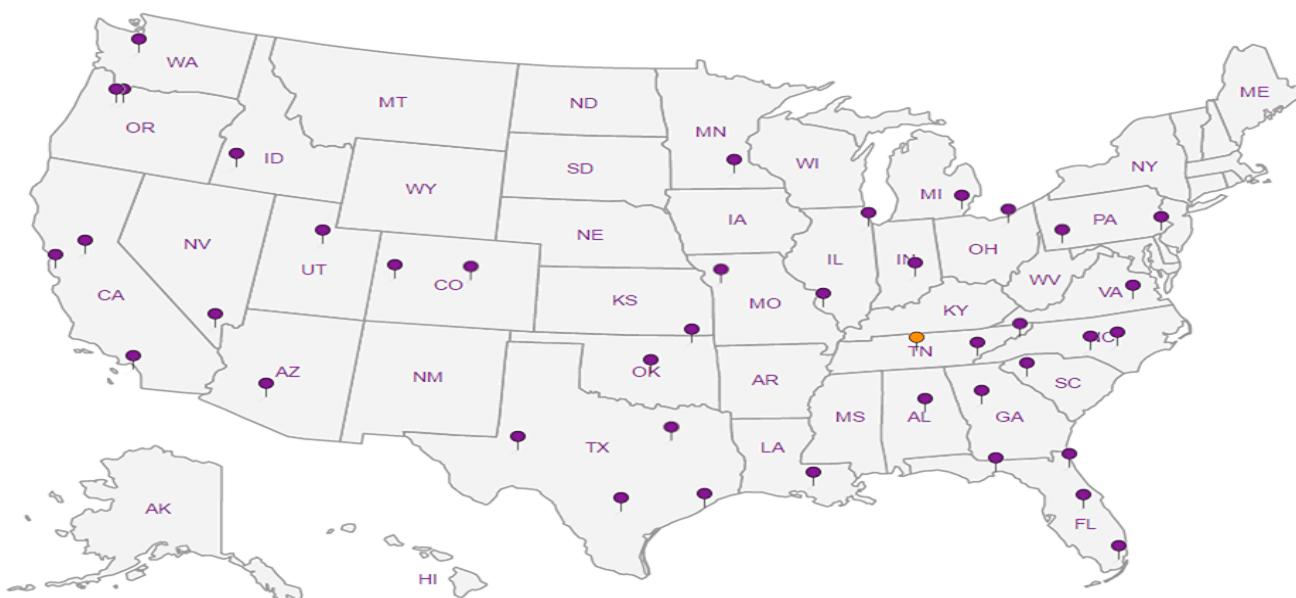
A2LA – ISO 17025	1461.01
A2LA – ISO 17025 ⁵	1461.02
Canada	1461.01
EPA-Crypto	TN00003

AIHA-LAP,LLC EMLAP	100789
DOD	1461.01
USDA	P330-15-00234

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



- | | |
|---|----|
| 1 | Cp |
| 2 | Tc |
| 3 | Ss |
| 4 | Cn |
| 5 | Sr |
| 6 | Qc |
| 7 | Gl |
| 8 | Al |
| 9 | Sc |

Bowser-Morner, Inc. 4518 Taylorsville Rd. Dayton, OH 45424		Billing Information: Accounts Payable 4518 Taylorsville Rd. Dayton, OH 45424		Pres Chk	Analysis / Container / Preservative						Chain of Custody				
								S-A-B S-C-I-E-N-C-E-S		Page 1 of 1					
Report to: Katherine H. Beach		Email To: kbeach@bowser-morner.com									12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-267-5859 Fax: 615-758-5859				
Project Description: Site Investigation		City/State Collected: Moraine, Ohio									L# 11006576 M047				
Phone: 937-236-8805 Fax: 937-233-2016	Client Project # 161803	Lab Project # BOWSERDOH-OHVAP									Tat				
Collected by (print): Michelle C. Torres	Site/Facility ID # OHIO	P.O. # 32 27-D029475									Acctnum: BOWSERDOH Template: T113437 Prelogin: P657689 TSR: 341 - John Hawkins PB: BF 6/5/18				
Collected by (signature): MCC	Rush? (Lab MUST Be Notified) Same Day _____ Five Day _____ Next Day _____ 5 Day (Rad Only) _____ Two Day _____ 10 Day (Rad Only) _____ Three Day _____	Quote # BOWSERDOH 060918S		Date Results Needed	No. of Cntrs							Shipped Via: FedEx Ground Remarks Sample # (lab only) -0)			
Immediately Packed on Ice N X Y															
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time										
TA - 161803 - 062918 - 10 - 41	Air			6/29/18		1	X								
	Air					1	X								
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks:				pH	Temp							Sample Receipt Checklist	
														COC Seal Present/Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by: (Signature)		Date: 7/2/18	Time:	Received by: (Signature)		Trip Blank Received: Yes / No	HCl / MeOH								
							TBR								
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Temp: °C	Bottles Received:							If preservation required by Login: Date/Time	
						Am b	1								
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature)		Date: 7/3/18	Time: 0845							Hold:	Condition: NCF <input checked="" type="checkbox"/>



Appendix B

Tables

TABLE 1
INDOOR AIR SAMPLING RESULTS, VALLEY ASPHALT

YEAR 5 PROFICIENCY TESTING

Sample L1006526-01 Air
 Sample Date 6/29/2018

Results

Method	Parameter	Units	Value	ODH Screening (ppb)	Units	Value	ODH Screening ($\mu\text{g}/\text{m}^3$)
TO-15	Acetone	ppb	94.5	-	$\mu\text{g}/\text{m}^3$	225.0	-
TO-15	Allyl chloride	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.626	-
TO-15	Benzene	ppb	<0.200	2	$\mu\text{g}/\text{m}^3$	<0.639	4
TO-15	Benzyl Chloride	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.04	-
TO-15	Bromodichloromethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.34	-
TO-15	Bromoform	ppb	<0.600	-	$\mu\text{g}/\text{m}^3$	<6.21	-
TO-15	Bromomethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.776	-
TO-15	Carbon disulfide	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.622	-
TO-15	Carbon tetrachloride	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.26	-
TO-15	Chlorobenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.924	-
TO-15	Chloroethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.528	-
TO-15	Chloroform	ppb	<0.200	80	$\mu\text{g}/\text{m}^3$	<0.973	400
TO-15	Chloromethane	ppb	0.404	-	$\mu\text{g}/\text{m}^3$	0.834	-
TO-15	Dibromochloromethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.70	-
TO-15	1,2-Dibromoethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.54	-
TO-15	1,2-Dichlorobenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.20	-
TO-15	1,3-Dichlorobenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.20	-
TO-15	1,4-Dichlorobenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.20	-
TO-15	1,2-Dichloroethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.810	-
TO-15	1,1-Dichloroethane	ppb	<0.200	16	$\mu\text{g}/\text{m}^3$	<0.802	63
TO-15	1,1-Dichloroethene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.793	-
TO-15	cis-1,2-Dichloroethene	ppb	<0.200	37	$\mu\text{g}/\text{m}^3$	<0.793	150
TO-15	trans-1,2-Dichloroethene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.793	-
TO-15	1,2-Dichloropropane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.924	-
TO-15	cis-1,3-Dichloropropene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.908	-
TO-15	trans-1,3-Dichloropropene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.908	-
TO-15	1,4-Dioxane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.721	-
TO-15	Ethanol	ppb	39.1	-	$\mu\text{g}/\text{m}^3$	73.6	-
TO-15	Ethylbenzene	ppb	<0.200	250	$\mu\text{g}/\text{m}^3$	<0.867	1300
TO-15	Trichlorofluoromethane	ppb	0.519	-	$\mu\text{g}/\text{m}^3$	2.92	-
TO-15	Dichlorodifluoromethane	ppb	0.321	-	$\mu\text{g}/\text{m}^3$	1.59	-
TO-15	Hexachloro-1,3-butadiene	ppb	<0.630	-	$\mu\text{g}/\text{m}^3$	<6.73	-
TO-15	n-Hexane	ppb	1.47	-	$\mu\text{g}/\text{m}^3$	5.17	-
TO-15	Isopropylbenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.983	-
TO-15	Methylene Chloride	ppb	3.02	-	$\mu\text{g}/\text{m}^3$	10.5	-
TO-15	Methyl Butyl Ketone	ppb	<1.25	-	$\mu\text{g}/\text{m}^3$	<5.11	-
TO-15	2-Butanone (MEK)	ppb	<1.25	-	$\mu\text{g}/\text{m}^3$	3.69	-
TO-15	4-Methyl-2-pentanone (MIBK)	ppb	<1.25	-	$\mu\text{g}/\text{m}^3$	<5.12	-
TO-15	Methyl methacrylate	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.819	-
TO-15	MTBE	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.721	-
TO-15	Styrene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<.851	-
TO-15	1,1,2,2-Tetrachloroethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.37	-
TO-15	Tetrachloroethylene	ppb	<0.200	25	$\mu\text{g}/\text{m}^3$	<1.36	170
TO-15	Toluene	ppb	2.73	-	$\mu\text{g}/\text{m}^3$	10.3	-
TO-15	1,2,4-Trichlorobenzene	ppb	<0.630	-	$\mu\text{g}/\text{m}^3$	<4.66	-
TO-15	1,1,1-Trichloroethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.09	-
TO-15	1,1,2-Trichloroethane	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<1.09	-
TO-15	Trichloroethylene	ppb	<0.200	2	$\mu\text{g}/\text{m}^3$	<1.07	10
TO-15	Vinyl acetate	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.704	-
TO-15	Vinyl chloride	ppb	<0.200	2	$\mu\text{g}/\text{m}^3$	<0.511	4
TO-15	m&p-Xylene	ppb	<0.400	200	$\mu\text{g}/\text{m}^3$	<1.73	800
TO-15	o-Xylene	ppb	<0.200	16	$\mu\text{g}/\text{m}^3$	<0.867	63
TO-15	1,2,4-Trimethylbenzene	ppb	0.348	-	$\mu\text{g}/\text{m}^3$	1.71	-
TO-15	1,3,5-Trimethylbenzene	ppb	<0.200	-	$\mu\text{g}/\text{m}^3$	<0.982	-
TO-15	1,4-Bromofluorobenzene	% Rec.	93.3	-	-	-	-
TO-15	1,4-Bromofluorobenzene	% Rec.	95.7	-	-	-	-

Notes

Bolded values indicate target analyte at or above a detectable level.

A value of " - " in the ODH Screening Levels columns indicates that there is no ODH Screening Level for that parameter

TABLE 2
INDOOR AIR SAMPLING RESULTS, VALLEY ASPHALT

SUMMARY OF SEVEN TESTING EVENTS DURING THE FIRST FIVE YEARS AFTER INSTALLATION OF SSDS

Results			30-day (8/5/13)	180-day (12/18/13)	Yr 1 (7/7/14)	Yr 2 (7/7/15)	Yr 3r (7/5/16)	Yr 4 (6/20/17)	Yr 5 (6/29/18)			30-day (8/5/13)	180-day (12/18/13)	Yr 1 (7/7/14)	Yr 2 (7/7/15)	Yr 3r (7/5/16)	Yr 4 (6/20/17)	Yr 5 (6/29/18)	
	Method	Parameter	Units	Value	Value	Value	Value	Value	Value	ODH Screening (ppb)	Units	Value	Value	Value	Value	Value	Value	ODH Screening (µg/m³)	
TO-15	Acetone	ppb	11	3.5	7.1	9	5.85	17.6	94.5	-	µg/m³	26	8.3	17	21	13.9	41.8	225.0	-
TO-15	Allyl chloride	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.626	<0.626	<0.63	<0.63	<0.626	<0.626	-	-	
TO-15	Benzene	ppb	<0.200	<0.200	<0.200	<0.20	0.238	<0.200	<0.200	2	µg/m³	<0.639	<0.639	<0.64	0.761	<0.639	<0.639	4	
TO-15	Benzyl Chloride	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<1.04	<1.04	<1.04	<1.0	<1.04	<1.04	-	-	
TO-15	Bromodichloromethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<1.34	<1.34	<1.34	<1.3	<1.34	<1.34	-	-	
TO-15	Bromoform	ppb	<0.600	<0.600	<0.600	<0.60	<0.60	<0.600	-	µg/m³	<6.21	<6.21	<6.2	<6.21	<6.21	<6.21	-	-	
TO-15	Bromomethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<0.776	<0.776	<0.78	<0.78	<0.776	<0.776	-	-	
TO-15	Carbon disulfide	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<0.622	<0.622	<0.62	<0.62	<0.622	<0.622	-	-	
TO-15	Carbon tetrachloride	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<1.26	<1.26	<1.26	<1.26	<1.26	<1.26	-	-	
TO-15	Chlorobenzene	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<0.924	<0.924	<0.92	<0.92	<0.924	<0.924	-	-	
TO-15	Chloroethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<0.528	<0.528	<0.53	<0.528	<0.528	<0.528	-	-	
TO-15	Chloroform	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	80	µg/m³	<0.973	<0.973	<0.97	<0.97	<0.973	<0.973	400		
TO-15	Chloromethane	ppb	0.53	0.56	0.54	0.98	0.675	0.533	0.404	-	µg/m³	1.1	1.2	1.1	2	1.39	1.10	0.834	-
TO-15	Dibromochloromethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<1.70	<1.70	<1.70	<1.7	<1.70	<1.70	-	-	
TO-15	1,2-Dibromoethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<1.54	<1.54	<1.54	<1.5	<1.54	<1.54	-	-	
TO-15	1,2-Dichlorobenzene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<1.20	<1.20	<1.20	<1.2	<1.20	<1.20	-	-	
TO-15	1,3-Dichlorobenzene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<1.20	<1.20	<1.20	<1.2	<1.20	<1.20	-	-	
TO-15	1,4-Dichlorobenzene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<1.20	<1.20	<1.20	<1.2	<1.20	<1.20	-	-	
TO-15	1,2-Dichloroethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.810	<0.810	<0.810	<0.81	<0.810	<0.810	-	-	
TO-15	1,1-Dichloroethane	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	16	µg/m³	<0.802	<0.802	<0.802	<0.80	<0.802	<0.802	63		
TO-15	1,1-Dichloroethene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.793	<0.793	<0.793	<0.79	<0.793	<0.793	-	-	
TO-15	cis-1,2-Dichloroethene	ppb	<0.200	<0.200	0.24	<0.20	<0.200	<0.200	37	µg/m³	<0.793	<0.793	0.95	<0.79	<0.793	<0.793	150		
TO-15	trans-1,2-Dichloroethene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.793	<0.793	<0.793	<0.79	<0.793	<0.793	-	-	
TO-15	1,2-Dichloropropane	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.924	<0.924	<0.924	<0.92	<0.924	<0.924	-	-	
TO-15	cis-1,3-Dichloropropene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.908	<0.908	<0.908	<0.91	<0.908	<0.908	-	-	
TO-15	trans-1,3-Dichloropropene	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.908	<0.908	<0.908	<0.91	<0.908	<0.908	-	-	
TO-15	1,4-Dioxane	ppb	<0.200	<0.200	<0.200	<0.20	<0.200	<0.200	-	µg/m³	<0.721	<0.721	<0.721	<0.72	<0.721	<0.721	-	-	
TO-15	Ethanol	ppb	61	330	230	8	683	121	39.1	-	µg/m³	120	620	430	15	1290	229	73.6	-
TO-15	Ethylbenzene	ppb	<0.200	0.3	<0.200	0.2	0.266	<0.200	250	µg/m³	<0.867	1.3	<0.867	0.87	1.15	<0.867	<0.867	1300	
TO-15	Trichlorofluoromethane	ppb	0.22	0.2	0.27	0.3	0.528	1.12	0.519	-	µg/m³	1.2	1.1	1.5	1.7	2.97	1.33	2.92	-
TO-15	Dichlorodifluoromethane	ppb	0.45	0.42	0.3	0.41	0.427	0.255	0.321	-	µg/m³	2.2	2.1	1.5	2	2.11	1.26	1.59	-
TO-15	Hexachloro-1,3-butadiene	ppb	<0.630	<0.630	<0.630	<0.63	<0.63	<0.630	-	µg/m³	<6.73	<6.73	<6.73	<6.7	<6.73	<6.73	<6.73	-	
TO-15	n-Hexane	ppb	0.38	0.32	0.38	0.44	0.242	0.485	1.47	-	µg/m³	1.3	1.1	1.3	1.6	0.853	1.71	5.17	-
TO-15	Isopropylbenzene	ppb	<0.200	<0.200	<0.200	<0.20	<0.20	<0.200	-	µg/m³	<0.983	<0.983	<0.983	<0.98	<0.983	<0.983	<0.983	-	
TO-15	Methylene Chloride	ppb	0.6	<0.200	0.36														



Appendix C
Mitigation Summary Database

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

Number on Map	Building Address	Owner Name & Address	Occupant Name & Address	Other Party(ies) Requiring Notification	Parcel/Building No.	Comments/Structure	Type	Methane Screening Level	TCE Screening Levels (10^{-5} levels)		Date Sampled By CRA			Mitigation Decision	
											January, March, August, and September 2012				
									Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)		
4	1901 Dryden Road	James Jurgensen Valley Asphalt Corporation 11641 Mosteller Road Cincinnati, OH 45241	Dan Crago Valley Asphalt Corporation 11641 Mosteller Road Cincinnati, OH 45241	Tina Ortiz Mark Fornes Realty, Inc. 7755 Paragon Rd. Suite 106 Dayton, OH 45459	5054 Building 4	Valley Asphalt: Prefab split level with unfinished basement Occupied	Non-Residential	0.5%	20	2	ND	200	ND	<ul style="list-style-type: none"> •Mitigation - SSDS <ul style="list-style-type: none"> •(7/11/13) Environmental Doctor installed mitigation system (1 extraction point/fan). •1 monitoring point (SS probe) installed 6/11/13 	

6/19/17

Notes:

Results that are bolded and highlighted red are greater than the Ohio Department of Health screening levels.

NA = Not Analyzed
 ND = Not Detected
 N/A = Not Applicable
 ppb = Parts per billion
 TCE = Trichloroethylene
 PCE = Tetrachloroethene

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

Comments from Previous Meeting(s)	Date Sample Result Letter Mailed	Date of Initial Mitigation Meeting	Date of Mitigation Recon Meeting (SSDS Sub)	Date Mitigation Plan Submitted to EPA	Date EPA Approved Mitigation Plan	Date Mitigation Plan Addendums Submitted to U.S. EPA	Date EPA Approved Mitigation Plan Addendums	RAPCA notification	Date of asbestos and/or lead removal	Date of Demolition
(7/11/13) •SSDS installed. •Radius of Influence testing performed; confirmed. •Moving forward with sampling.	UPS on 10-23-12; Receipt verified 5/1/13	4/24/13	5/23/13	6/10/13	6/10/13	Asbestos/Lead Management Addendum - 6/27/13; VI Mitigation Work Plan Addendum - 7/1/13; Proficiency Testing/Work Plan Addendum - 4/20/15	7/2/2013 6/1/2015	N/A	N/A	N/A

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

Date of SSDS Installation	Post-Mitigation Radius of Influence Vacuum Readings	Methane Screening Level			30-Day Proficiency Sampling by BMI			Date O&M Manual finalized	Methane Screening Level			180-Day Proficiency Sampling by BMI		
					August 5 and 6, 2013							December 18 and 19, 2013		
			Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)			Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)
7/10/13	-0.029" w.c. at SS P4-1; 7/10/13	0.5%	20	2	N/A	ND	ND	9/6/13	0.5%	20	2	ND	14	ND

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

Methane Screening Level	TCE Screening Levels (10^{-5} levels)		Year 1 Proficiency Sampling by BMI			Date of Year 1 SSDS Inspection	Date of SSDS upgrade (if nec.)	Methane Screening Level	TCE Screening Levels (10^{-5} levels)			Year 2 Proficiency Sampling by BMI			Date of Year 2 SSDS Inspection	Date of SSDS upgrade (if nec.)			
			July 7 - 8, 2014									July 7, 2015							
	Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)				Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)						
0.5%	20	2	ND	0.21	1	7/7/2014	N/A	0.5%	Not Applicable - no longer required per Addendum #3 dated April 22, 2015	2	Not Tested - no longer required per Addendum #3 dated April 22, 2015	Not Tested - no longer required per Addendum #3 dated April 22, 2015	ND	7/7/2015	N/A				

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

Methane Screening Level			Year 3 Proficiency Sampling by BMI			Date of Year 3 SSDS Inspection	Date of SSDS upgrade (if nec.)	Methane Screening Level	Year 4 Proficiency Sampling by BMI			Date of Year 4 SSDS Inspection	Date of SSDS upgrade (if nec.)	
			July 5, 2016						June 20, 2017					
	TCE Screening Levels (10^3 levels)	Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)	TCE Screening Levels (10^3 levels)	Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub-Slab (in ppb)	Max TCE Indoor Air (in ppb)		
0.5%	Not Applicable - no longer required per Addendum #3 dated April 22, 2015	2	Not Tested - no longer required per Addendum #3 dated April 22, 2015	Not Tested - no longer required per Addendum #3 dated April 22, 2015	ND	6/29/2016 7/1/2016 7/5/2016	N/A	0.5%	Not Applicable - no longer required per Addendum #3 dated April 22, 2015	2	Not Tested - no longer required per Addendum #3 dated April 22, 2015	Not Tested - no longer required per Addendum #3 dated April 22, 2015	ND	5/24/2017 N/A

**VALLEY ASPHALT ON-SITE MITIGATION SUMMARY DATABASE SOUTH DAYTON DUMP AND LANDFILL SITEMORAINE,
MONTGOMERY COUNTY, OHIO**

TCE Screening Levels (10^{-5} levels)		Year 5 Proficiency Sampling by BMI			Date of Year 5 SSDS Inspection	Date of SSDS upgrade (if nec.)
		June 29, 2018				
Sub-Slab (in ppb)	Indoor Air (in ppb)	Max Methane in Sub-Slab	Max TCE Sub- Slab (in ppb)	Max TCE Indoor Air (in ppb)		
Not Applicable - no longer required per Addendum #3 dated April 22, 2015	2	Not Tested - no longer required per Addendum #3 dated April 22, 2015	Not Tested - no longer required per Addendum #3 dated April 22, 2015	ND	6/27/2018	N/A

ENGINEERING & ENVIRONMENTAL SERVICES:

Geotechnical Engineering
Subsurface Exploration
Civil Engineering
Environmental Services
Due Diligence
Permitting



LABORATORY SERVICES:

Geotechnical Laboratories
Construction Materials Laboratories
Mineral Aggregates
Concrete
Stone & Masonry
Asphalt
Analytical Services Laboratories
Industrial Minerals
Product Testing
Mechanical/Metallurgical Testing
Calibration Services
Chemistry Laboratory
Consulting Geology
Radon Reference Laboratory

CONSTRUCTION SUPPORT SERVICES:

General Construction
Construction Quality Assurance
Building Code Special Inspections
Transportation Projects:
- Contractor QA/QC
- Material Supplier QA/QC
- Owner Quality Assurance
Materials Consulting:
- Construction Engineering